

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number  
**WO 2004/057971 A1**

- (51) International Patent Classification<sup>7</sup>: **A23C 19/02**, 19/05
- (74) Agents: **CALHOUN, Douglas, C., et al.**; A J Park, 6th Floor Huddart Parker Building, Post Office Square, PO Box 949, 6015 Wellington (NZ).
- (21) International Application Number:  
PCT/NZ2003/000288
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date:  
22 December 2003 (22.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
523394 24 December 2002 (24.12.2002) NZ
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): **FONTERRA CO-OPERATIVE GROUP LIMITED** [NZ/NZ]; 103 Leonard Isitt Drive, Auckland Airport, Auckland (NZ).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **BHASKAR, Ganugapati, Vijaya**, [NZ/NZ]; 115 Pacific Drive, Palmerston North (NZ). **HAVEA, Palatasa**, [TO/NZ]; 20B Wood Street, Palmerston North (NZ). **ELSTON, Peter**, [NZ/NZ]; 29 Hanmer Place, Palmerston North (NZ).
- Published:**
- with international search report
  - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: DAIRY PROTEIN PROCESS AND APPLICATIONS THEREOF

(57) Abstract: The invention provides a dried milk protein concentrate which has high denatured whey protein content and is calcium depleted. Processes for preparing the product are also provided. The product is useful in preparing cheese, particularly for reducing the formation of nuggets (thin protein rich gels of a different colour) in the cheese. In one embodiment the calcium content of a milk protein concentrate is reduced and whey proteins are denatured using heat treatment, prior to drying, to obtain the product.

WO 2004/057971 A1